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EXAMINER BORSETTL, GREG				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/564,243

**Applicant(s)**

BARRIAC ET AL.

**Examiner**

GREG A. BORSETTI

**Art Unit**

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/ISD)
- Paper No(s)/Mail Date 11/14/2008.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

#### **DETAILED ACTION**

1. Claims 1-23 are pending.
2. Claims 1-21 have been amended.
3. Claims 22-23 have been added.
4. The objection to the abstract is withdrawn.
5. The objection to the specification is withdrawn.

#### ***Response to Arguments***

6. Applicant's arguments filed 11/14/2008 have been fully considered but they are not persuasive.
7. In response to applicant's argument that "Kirla is accordingly directed to solving a problem that differs from that of the claimed invention..." (Remarks, Page 18, ¶ 1), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.
8. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Independent claim 1 additionally recites ... signal in the receiver terminal, Remarks, Page 19, ¶ 1) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. Applicant further argues "Kirla fails to teach, or suggest a system that encompasses these claimed features as recited in now-amended independent claim 14, as well as the corresponding steps recited in now-amended independent claim 1" (Remarks, Page 19, ¶ 2). The examiner agrees, Kirla fails to teach an audio filter module that is adapted to duplicate at least a portion of the speech signal. The argument is persuasive.

10. Applicant argues "the delay measurement system is implemented in a gateway apparatus (GW) which is not a receiver terminal within the meaning and scope of the claimed invention." (Remarks, Page 19, ¶ 3) The examiner respectfully disagrees and direct applicant to the specification, page 3, lines 11-15, "...IP terminating equipments (IP telephone, gateway, local area network)... A gateway is an IP terminal, and thus telephone terminal equipment as exemplified in the Remarks, Page 19, ¶ 3. The argument is not persuasive.

### ***Claim Objections***

11. Claims 1, 14, 19, and 20 are objected to because of the following informalities: The claim recites a limitation of "duplicating at least a portion of the speech signal reconstituted by the telephony module to reconstitute a second speech signal". The examiner notes that the second speech signal is not reconstituted; it is generated from the reconstructed first signal. Therefore, to say it is reconstituted is incorrect (it is constituted). Appropriate correction is required.

***Specification***

12. The disclosure is objected to because of the following informalities: The disclosure is objected to because it contains an embedded hyperlink (Specification, Page 21, lines 19-20 and Page 23, lines 3 and 19) and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.
13. The French Patent document No. 2733867 has been cited for incorporation by reference (Specification, Page 19, lines 31-37). However, it has not been included in an IDS.

Appropriate correction is required.

***Information Disclosure Statement***

14. The Information Disclosure Statement (IDS) submitted on 11/14/2008 is in compliance with the provisions of 37 CFR 1.97.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

16. Claim(s) 1-13 is/are rejected under 35 USC 101 for being nonstatutory. Under the most recent interpretation of the Interim Guidelines regarding 35 U.S.C.101, a method claim must (1) be tied to another statutory class or (2) transform underlying subject matter to a different state or thing. If no transformation occurs, the claim(s) should positively recite the other statutory class to which it is tied to qualify as a statutory process under 35 U.S.C. 101. As for guidance to areas of statutory subject matter, see 35 U.S.C. 101 Interim Guidelines (with emphasis of the Clarification of "processes" under 35 USC 101); As an example, the claim(s) could identify the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed. In this case, there is no physical transformation between the speech because it is received digitally and not transformed to a different state or thing. Furthermore, there is no indication of another statutory class. The decoder and telephony module are described in the specification as software modules (Spec, Page 9, essentially software modules), which are non-statutory under 35 USC 101 and thus do not tie the method claim to another statutory class.

17. Claims 14-18 are also rejected under 35 USC 101. Although the claims recite insert device type elements, these elements are disclosed in the specification (Spec, Page 9, essentially software modules) as a software embodiment, and when treated as a whole, claims 14-18 are more toward a non-statutory embodiment and not necessarily a hardware embodiment.

18. Claims 19-23 are also rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. As was stated in the previous

action, the computer-readable information medium (as defined by the newly provided specification, Page 25, ¶1) includes transmissible media, which does not fall within one of the four enumerated statutory categories of invention under 35 USC 101. Therefore, claims 19 and 20 are still non-statutory because they are embodied on non-statutory elements.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 1-4, 6, 14-15, 17, and 21 are rejected under 35 U.S.C. 103(a) as being taught by Galetto et al. (US Pre-Grant Publication #20050157705).

As per claim 1, Galetto teaches the method comprising:

obtaining from the received data packets, a stream of audio packets and decoding the audio packet stream within a predetermined decoding time to reconstitute a first speech signal (Fig. 2, decoder 32 first decodes the speech signal. It would have been obvious to someone of ordinary skill in the art at the time of the invention that decoders 32 and 34 would have known decoding times or they would not be able to

correctly determine the time delay between the speech signal before and after transcoding 10 due to a variable decoding time.)

duplicating at least a portion of the speech signal reconstituted by the telephony module to reconstitute a second speech signal (Fig. 2, the monitoring point 12 makes two copies of the signal that go into the transcoding 10 and downwards into the time differential calculation.)

determining a time difference between the first speech signal and the second speech signal (Fig. 2, 30, ¶ 0017 further teaches *...the cross-correlation algorithm 30 delays the output signal with the computed difference, filling the buffer with zero values. This permits computation of the actual delay between speech samples...*)

calculating the processing delay of the speech signal contained in the data packets received in the receiver terminal from at least the determined time difference between said first and second speech signals and the predetermined decoding time to evaluate the processing delay of the speech signal in the receiver terminal.

(Fig. 2, 44 shows the latency output measurements for the network element that is being analyzed. ¶ 0017 teaches the time delay calculation by correlation between the envelopes. Lastly, as was stated above, it would have been obvious to someone of ordinary skill in the art at the time of the invention that decoders 32 and 34 would have known decoding times or they would not be able to correctly determine the time delay between the speech signal before and after transcoding 10 due to a variable decoding time.)



As per claim 2, claim 1 is incorporated and Galetto teaches:

wherein the determined time difference between said first and second speech signals is measured by intercorrelation of envelope signals of said first and second speech signals. (abstract, ...*cross-correlating the envelopes to determine correlating areas of the envelopes, and determining a value for the speech latency between the interfaces from the timestamps associated with correlating areas of the envelopes...*)

As per claim 3, claim 1 is incorporated and Galetto teaches:

wherein the step of determining the time difference is preceded by a step of detecting vocal activity in the first and second speech signals, the determining and calculating steps being executed if the vocal activity detected in the first and second signals is above a predetermined threshold. (Fig. 2, 36 shows that a VAD (voice activity detector) is used prior to the correlation (time-difference) calculation. ¶ 0017 further teaches that the VAD controls the calculation and a thresholding (also claim 8). However, Galetto does not specifically teach that the VAD is done for both the first and second speech signals, only the first. However, it would have been obvious to someone of ordinary skill in the art at the time of the invention to use a VAD on the output side as well to determine if the output speech signal has a sufficient envelope for correlation due to packet loss, attenuation, etc.)

As per claim 4, claim 1 is incorporated and Galetto fails to teach, but suggests:

wherein said decoding within a predetermined decoding time implements one of a decoding algorithm identical to that implemented in said telephony module and a constant and known decoding time difference relative to the algorithm implemented in the telephony module. (Galetto, Fig. 2, teaches decoders 32 and 34 where it

would have been obvious to someone of ordinary skill in the art at the time of the invention that they would need to be identical (i.e. equal decoding time) or the time difference between them would have to be known in order to be able to calculate the time difference between the signals they are decoding. If the decoders are variable and not known, the correlation algorithm cannot determine the actual delay between the speech samples because the algorithm itself can be delayed due to the variance in the preceding decoding steps.)

As per claim 6, claim 1 is incorporated and Galetto teaches:

wherein said packet switching network is an IP network and the data packets received in the terminal are IP packets. (¶ 0002, ...*"packet based" networks...*)

Claims 14-15, 17, and 21 are rejected for the same reasons as claims 1-3 for having similar limitations. Galetto, claim 11, further teaches the apparatus (device) limitation to perform the methods of claims 1-3.

20. Claims 5, 7-9, 11-12, 16, and 18 are rejected under 35 U.S.C. 103(a) as being taught by Galetto et al. (US Pre-Grant Publication #20050157705) in view of

Psytechnics Ltd., (NPL document "Estimating E-model Id within a VoIP network" hereinafter Psytechnics).

As per claim 5, claim 1 is incorporated and Galetto fails to fully teach, but Psytechnics teaches:

wherein the processing delay is obtained by summing the determined time difference between the first and second speech signals and the predetermined decoding time of the first speech signal. (Page 3, ...*D<sub>j</sub>-delay introduced by jitter buffer and decoder...* It would have been obvious to add the two values to give an overall estimate of the delay for the network element.)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Psytechnics with the Galetto device because Psytechnics provides the E-model framework for determining overall end-to-end delay where Galetto could provide a method for obtaining delay across a network element, such as a VoIP gateway instead of using the equation  $D_j$ . Therefore, it would have been obvious to combine Psytechnics with Galetto to better provide an accurate overall end-to-end delay value.

As per claim 7, claim 1 is incorporated and Galetto teaches:

evaluating the calculated processing delay of the speech signal in the terminal (Fig. 2, 44)

Galetto fails to teach, but Psytechnics teaches:

to evaluate end-to-end transmission delay of the speech signal contained in the data packets received in the receiver terminal during the voice call to the terminal sending said speech signal over the packet-switched network. (Page 2, Psytechnics teaches the absolute delay and the further teaches is on Page 3 in the calculation of  $I_d$ , where the absolute delay is the end to end delay.)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Psytechnics with the Galetto device because Psytechnics provides the E-model framework for determining overall end-to-end delay where Galetto could provide a method for obtaining delay across a network element, such as a VoIP gateway instead of using the equation  $D_j$ . Therefore, it would have been obvious to combine Psytechnics with Galetto to better provide an accurate overall end-to-end delay value.

As per claim 8, claim 7 is incorporated and Galetto teaches:

the processing delay of the speech signal received in the receiver terminal.  
(Fig. 2, 44)

Galetto fails to teach, but Psytechnics teaches:

evaluating the processing delay of the speech signal sent over the packet-switched network (Page 2, the  $D_e$  delay is the processing delay for the sent signal.)

measuring the transmission delay of the speech signal in the packet-switched network (Page 2, the Drtcp delay is the transmission delay.)

evaluating the end-to-end transmission delay from said processing delay of the speech signal sent over the packet-switched network, said transmission delay of the speech signal in the packet-switched network, and said processing delay of the speech signal received in the receiver terminal. (Galetto teaches the processing delay in the receiver terminal. Psytechnics, Page 3, Calculation of Id, teaches the evaluation of the delay based on De, Drtcp, and Dj.)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Psytechnics with the Galetto device because Psytechnics provides the E-model framework for determining overall end-to-end delay where Galetto could provide a method for obtaining delay across a network element, such as a VoIP gateway instead of using the equation Dj. Therefore, it would have been obvious to combine Psytechnics with Galetto to better provide an accurate overall end-to-end delay value.

As per claim 9, claim 8 is incorporated and Galetto fails to teach, but Psytechnics teaches:

wherein the processing delay of the speech signal sent over the packet-switched network is evaluated by consulting a table stored in the receiver terminal containing a predefined maximum value and a predefined minimum value of said processing delay of the speech signal sent over the packet-switched network for each type of speech signal

send coder, predefined maximum values accounting for payload of the IP packets received IP packets. (Page 3, Estimation of De)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Psytechnics with the Galetto device because Psytechnics provides the E-model framework for determining overall end-to-end delay where Galetto could provide a method for obtaining delay across a network element, such as a VoIP gateway instead of using the equation Dj. Therefore, it would have been obvious to combine Psytechnics with Galetto to better provide an accurate overall end-to-end delay value.

As per claim 11, claim 8 is incorporated and Galetto fails to teach, but Psytechnics teaches:

wherein the transmission delay of the speech signal in the packet-switched network is evaluated from sender report information extracted from the received data packets. (Page 3, Estimation of Drtcp)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Psytechnics with the Galetto device because Psytechnics provides the E-model framework for determining overall end-to-end delay where Galetto could provide a method for obtaining delay across a network element, such as a VoIP gateway instead of using the equation Dj. Therefore, it would have been obvious to combine Psytechnics with Galetto to better provide an accurate overall end-to-end delay value.

As per claim 12, claim 7 is incorporated and Galetto fails to teach, but Psytechnics teaches:

wherein the end-to-end transmission delay is evaluated by summing said processing delay of the speech signal sent over the packet-switched network, said transmission delay of the speech signal in the packet-switched network and said processing delay of the speech signal received in the receiver terminal.

(Page 3, Calculation of Id)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Psytechnics with the Galetto device because Psytechnics provides the E-model framework for determining overall end-to-end delay where Galetto could provide a method for obtaining delay across a network element, such as a VoIP gateway instead of using the equation  $D_j$ . Therefore, it would have been obvious to combine Psytechnics with Galetto to better provide an accurate overall end-to-end delay value.

Claims 16 and 18 are rejected for the same reasons as claim 7 for having similar limitations (device for evaluating end-to-end delay). Galetto, claim 11, further teaches the apparatus (device) limitation to perform the methods of claims 7.

21. Claims 10, 19, 21, 22, and 23 are rejected under 35 U.S.C. 103(a) as being taught by Galetto et al. (US Pre-Grant Publication #20050157705) in view of

Psytechnics Ltd., (NPL document "Estimating E-model Id within a VoIP network" hereinafter Psytechnics) and further in view of Kirla et al. (WO2001045291A1 hereinafter Kirla).

As per claim 10, claim 8 is incorporated and Galetto and Psytechnics fail to teach, but Kirla teaches:

wherein the transmission delay of the speech signal in the packet-switched network is evaluated using a Ping technique. (column 8, lines 36-40,...*Such a Ping procedure is a globally used application within TCP/IP protocol stacks (TCP--Transfer Control Protocol) to estimate round-trip delay around to a far-end host... The control messages which were shown above to represent the transmission delay use a Ping technique.*)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Kirla with the Galetto and Psytechnics device because the substitution of one known elements for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Kirla provides another method for determining the transmission delay which can be used by Psytechnics to estimate the end-to-end delay.

Claim 19 is rejected for the same reasons as claim 1. However, Galetto and Psytechnics fail to specifically teach a computer-readable medium. Kirla, claim 21, provides a medium for determining the delay associated with speech. It would have



been obvious to someone of ordinary skill in the art at the time of the invention to use a computer-readable medium such as Kirla with the Galetto to program general purpose processors to perform the method of Galetto.

Claim 20 is rejected for the same reasons as 1 and 7. Galetto teaches the method up to and including calculation of the processing delay. Psytechnics provides the processing delay to calculate an end-to-end delay. Kirla, lastly in claim 21, provides a medium for determining the delay associated with speech. It would have been obvious to someone of ordinary skill in the art at the time of the invention to use a computer-readable medium such as Kirla with the Galetto to program general purpose processors to perform the method of Galetto.

As per claims 22 and 23, Galetto and Psytechnics fail to teach, but Kirla teaches:

wherein said telephone terminal equipment comprises an IP telephone or a personal computer having telephony software. (Kirla, column 5, lines 1-4, ... *commercial Internet Protocol clients as indicated in FIG. 6 by the Internet Phone 624...* also see Fig. 6)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Kirla with the Galetto and Psytechnics device because the substitution of one known elements for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Kirla provides another method for determining the transmission delay which can be used by Psytechnics to estimate the end-to-end delay.

22. Claim 13 is rejected under 35 U.S.C. 103(a) as being taught by Galetto et al. (US Pre-Grant Publication #20050157705) in view of Psytechnics Ltd., (NPL document "Estimating E-model Id within a VoIP network" hereinafter Psytechnics) and further in view of Shaffer et al. (US Patent #6370163 hereinafter Shaffer).

As per claim 13, claim 7 is incorporated and Galetto fails to teach, but Psytechnics teaches:

creating information representing obtained end-to-end delay values  
(Page 3, Calculation of Id)

Galetto and Psytechnics fail to teach, but Shaffer teaches:

sending said created end-to-end delay information over the packet-switched network to a collection server configured to manage end-to-end delay information sent by a plurality of communication terminals connected to the network. (column 2, lines 32-35, ...*The determination of end-to-end transmission delay includes obtaining network topology data from a server device, the data including an end-to-end transmission delay attributed to the network topology...* Delay data is taken from a server where it is stored to reference the end-to-end delay as developed by Psytechnics.

It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Shaffer with the Psytechnics and Galetto device because the goal

of Shaffer is "a system and a method for speech transport over a data network which minimizes end-to-end delay caused by network traffic and network topology between two IP telephony devices." [Shaffer, column 2, lines 9-12] The delay information collected by Psytechnics and Galetto is referenced by Shaffer to reduce traffic in data networks.

### ***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to PTO-892, Notice of References Cited for a listing of analogous art.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREG A. BORSETTI whose telephone number is (571)270-3885. The examiner can normally be reached on Monday - Thursday (8am - 5pm Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Greg A. Borsetti/  
Examiner, Art Unit 2626

/Talivaldis Ivars Smits/  
Primary Examiner, Art Unit 2626

2/10/2009